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| 13. ABSTRACT (Maximum 200 words)<br>The principal investigator pursued research aimed at the development of a logistical system model. The research resulted in a number of publications on topics including parts and service demand distribution generated by primary production; row-continuous markov chains; system balance for extended logistic systems; and extrapolation of the mean lifetime of a large population from its preliminary survival history. This report summarizes the research and lists titles of publications resulting from the grant. <div style="text-align: right; font-size: 2em; font-weight: bold; margin-top: 10px;"> DTIC<br/>ELECTE<br/>DEC 07 1989<br/>S B D </div>                                |   |  |                                    |  |
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AFOSR  82-0032

FINAL REPORT

A large number of papers were generated with total or partial support from AFOSR. Those papers relating directly to the logistical methodology of the grant are indicated on the list by an asterisk. There is some duplication between the list given here and that given for the final technical report AFOSR 79-0043A.

The repeated listing is given to describe some new status of a paper such as designation of a journal which has accepted the paper or which has already published the paper. Papers reissued after total revision have also been given again.

The funding of the grant also provided some support for two graduate students. Mark Zackman who is now on the faculty at the Georgia Institute of Technology and Ravi Ramaswami whose dissertation is in progress.

Julian Keilson  
2/7/83

LIST OF SUPPORTED PAPERS

AFOSR [REDACTED] 82-0032

Final Report

"Evaluation of the Total Time in System in a Preempt/Resume Priority Queue Via a Modified Lindley Process" (with U. Sumita), Working Paper Series No. QM 8219, October 1982. Submitted.

\* "Parts and Service Demand Distribution Generated by Primary Production" (with P. Kubat), Working Paper Series No. QM 8216. Submitted.

\* "Extrapolation of the Mean Lifetime of a Large Population from Its Preliminary Survival History" (with U. Sumita), Working Paper Series No. QM 8210 (revision of "Prediction of Lifetime from Incomplete Survival Data", Working Paper Series No. QM 7920). Submitted

\* "Homogeneous Row-Continuous Bivariate Markov Chains with Boundaries" (with M. Zachmann), Math. of Operations Research (accepted subject to revision).

\* "Row-Continuous Finite Markov Chains, Structure and Algorithms" (with U. Sumita and M. Zachmann), March 1981 (in revision).

"Significance Points for Some Tests of Uniformity on the Sphere" (with D. Petronidas, U. Sumita and J. Wellner), Journal of Stat. Computation and Simulation. Accepted.

"A Decomposition of the Beta Distribution, Related Order and Asymptotic Behavior" (with U. Sumita), Ann. Inst. Statist. Math., A. Accepted.

"The Depletion Time for M/G/1 Systems and a Related Limit Theorem" (with U. Sumita), Journal of Applied Probability. Accepted.

\* "System Balance for Extended Logistic Systems" (with S. Graves), Operations Research, Vol. 30:6, Nov/Dec 1982 (scheduled to appear).

"Waiting Time Distribution Response to Traffic Surges Via the Laguerre Transform"; Proc. Conf. at Boca Raton, 1980, Applied Probability--Computer Science The Interface Volume II, Birkhauser, 1982.

"On the Distribution and Covariance Structure of the Present Volume of a Random Income Stream", Journal of Applied Probability, Vol. 19, pp. 240-244, 1982.

\*These papers are related directly to the logistical methodology of the grant.

Julian Keilson  
2/7/83

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